STATIONARY SOURCE PERMIT TO OPERATE

This permit supersedes your permit dated April 6, 2004

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

University of Richmond
Physical Plant
Richmond, VA 23173
Registration No.: 50209
County-Plant ID No.: 760-0087

is authorized to operate

An Educational Facility

located at

Richmond Way and Gambles Mill
Richmond, Virginia

in accordance with the Conditions of this permit.

Approved on DRAFT.

_____
Director, Department of Environmental Quality

Permit consists of 13 pages.
Permit Conditions 1 to 39.

PERMIT CONDITIONS - the regulatory reference or authority for each condition is listed in parentheses ( ) after each condition.

APPLICATION

1. Except as specified in this permit, the permitted facility is to be operated as represented in the permit application dated November 7, 1995, including amendment information dated March 14, 1996, March 24, 2003, December 5, 2003, and August 10, 2004. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.
   (9 VAC 5-80-830)

PROCESS REQUIREMENTS

2. **Equipment List** – Equipment to be constructed at this facility consists of:

Generators:

18 Detroit SO DSEJB rated at 50 kW burning diesel oil
19 Detroit 60 DSEJB rated at 60 kW burning diesel oil

Equipment previously permitted at this facility consists of:

Boilers:

1 CNB Trifuel T-700P equipped with overfire air and rated at:
21.3 mmbtu/hr burning bituminous coal (underfeed stoker)
25.1 mmbtu/hr burning #4 fuel oil
25.1 mmbtu/hr burning natural gas

2 CNB Trifuel T-700P equipped with overfire air and rated at:
21.3 mmbtu/hr burning bituminous coal (underfeed stoker)
25.1 mmbtu/hr burning #4 fuel oil
25.1 mmbtu/hr burning natural gas

3 Union Iron WT equipped with overfire air and rated at 26.7 mmbtu/hr burning bituminous coal (underfeed stoker)

4 Union Iron WT equipped with overfire air and rated at 33.3 mmbtu/hr burning bituminous coal (underfeed stoker)

5 Kewanee M505FO rated at 6.3 mmbtu/hr burning #2 fuel oil

6 Cleaver Brooks CBH 200 SPB rated at 2.1 mmbtu/hr burning natural gas

Generators:

7 Waukesha VHP7100 G rated at 725 kw burning natural gas
8 Kohler 250ROZD81 rated at 250 kw burning diesel oil
9 Caterpillar 3456TA rated at 450 kw burning diesel oil
10 Onan 6DE rated at 6 kw burning diesel oil
11 Onan 125DGEA rated at 125 kw burning diesel oil
12 Onan 25 DLGL rated at 25 kw burning diesel oil
13 Cummins 4BT3.9 rated at 50 kw burning diesel oil
14 Katolight D45FRH4 rated at 45 kw burning diesel oil
15 Kohler 30RH rated at 30 kw burning diesel oil
16 Kohler 150ROZJ71 rated at 150 kw burning diesel oil
17 Olympian D150P1 rated at 150 kw burning diesel oil

(9 VAC 5-80-850)

3. **Emission Controls** - The particulate emissions from the #1, #2, #3, and #4 boilers shall be controlled by overfire air. The overfire air systems shall maintain a particulate control efficiency of no less than 30%. The overfire air systems shall be provided with adequate access for inspection.
(9 VAC 5-80-850)

4. **Replacement** – The existing Onan 30 EK rated at 30 kw generator burning liquid propane gas shall be replaced with a Kohler 250ROZD81 rated at 250 kw generator burning diesel oil. Reactivation of this old replaced unit may require a permit.
(9 VAC 5-80-850)

5. **Replacement** – The existing Lima EGASM rated at 100 kw generator burning diesel oil shall be replaced with a Caterpillar 3456TA rated at 450 kw generator burning diesel oil. Reactivation of this old replaced unit may require a permit.
(9 VAC 5-80-850)

OPERATING/EMISSION LIMITATIONS

6. **Operating Hours** - The #7 generator shall operate no more than 1,000 hours per year, calculated as the sum of each consecutive 12 month period.
(9 VAC 5-80-850)

7. **Operating Hours** – The #8, #9, #10, #11, #12, #13, #14, #15, #16, #17, #18, and #19 generators shall each operate no more than 500 hours per year calculated as the sum of each consecutive 12 month period.
(9 VAC 5-80-850)

8. **Power Limitation** - The #8, #9, #10, #11, #12, #13, #14, #15, #16 #17, #18, and #19 generators are to be used only for providing power at the location during interruption of service from the normal power supplier and for periodic testing.
   (9 VAC 5-80-850)

9. **Fuel** - The approved fuels for the #1 and #2 boilers are natural gas, residual oil, and coal. Residual oil is defined as fuel oil that meets the specifications for fuel oil number 4 under the American Society for Testing and Materials, ASTM "Standard Specification for Fuel Oils". A change in the fuels may require a permit to modify and operate.
   (9 VAC 5-80-850)

10. **Fuel** - The approved fuel for the #3 and #4 boilers is coal. A change in the fuels may require a permit to modify and operate.
    (9 VAC 5-80-850)

11. **Fuel** - The approved fuel for the #5 boiler is distillate oil. Distillate oil is defined as fuel oil that meets the specifications for fuel oil numbers 1 or 2 under the American Society for Testing and Materials, ASTM "Standard Specification for Fuel Oils". A change in the fuel may require a permit to modify and operate.
    (9 VAC 5-80-850)

12. **Fuel** - The approved fuel for the #6 boiler and the #7 generator is natural gas. A change in the fuel may require a permit to modify and operate.
    (9 VAC 5-80-850)

13. **Fuel** - The approved fuel for the #9, #10, #11, #12, #13, #14, #15, #16, #17, #18, and #19 generators is distillate oil. Distillate oil is defined as fuel oil that meets the specifications for fuel oil numbers 1 or 2 under the American Society for Testing and Materials, ASTM "Standard Specification for Fuel Oils". A change in the fuels may require a permit to modify and operate.
    (9 VAC 5-80-850)

14. **Fuel Throughput** - The #1, #2, #3, and #4 boilers shall consume no more than 7,500 tons of coal per year, calculated as the sum of each consecutive 12 month period.
    (9 VAC 5-80-850)

15. **Fuel Throughput** - The #1 and #2 boilers shall consume no more than 30,000 gallons of residual oil per year, calculated as the sum of each consecutive 12 month period. In addition, the #1 and #2 boilers shall consume no more than 150 million cubic feet of natural gas per year, calculated as the sum of each consecutive 12 month period.
    (9 VAC 5-80-850)

16. **Fuel Throughput** - The #5 boiler shall consume no more than 1,000 gallons of distillate oil per year, calculated as the sum of each consecutive 12 month period.
    (9 VAC 5-80-850)

17. **Fuel** - The coal, distillate oil, residual oil shall meet the specifications below:

    COAL:
    Maximum sulfur content per shipment: 0.8 %
    Maximum ash content per shipment: 7 %

    DISTILLATE OIL which meets the ASTM D396 specification for numbers 1 or 2 fuel oil:
    Maximum sulfur content per shipment: 0.3 %

    RESIDUAL OIL which meets the ASTM D396 specifications for numbers 4, 5, or 6 fuel oil:
    Maximum sulfur content per shipment: 1.7 %

    (9 VAC 5-80-850)

18. **Fuel Certification** - The permittee shall obtain a certification from the fuel supplier with each shipment of distillate oil, residual oil, and coal. Each fuel supplier certification shall include the following:

    a. The name of the fuel supplier;

    b. The date on which the distillate oil, residual oil, coal was received;

    c. The volume of distillate oil, residual oil, coal delivered in the shipment;

    d. A statement that the distillate oil, residual oil complies with the American Society for Testing and Materials specifications for numbers 1 or 2 for distillate, 4, 5, or 6 for residual fuel oil,

    e. The sulfur content of the distillate oil, residual oil, coal

    f. The ash content of the coal

    g. Documentation of sampling of the residual oil and coal indicating the location of the residual oil and coal when the sample was drawn; and,

    h. The methods used to determine the sulfur content of the residual and distillate oil and the sulfur and ash content of the coal

    (9 VAC 5-80-850)

19. **Emission Limits** - Emissions from the operation of the #1 boiler shall not exceed the limits specified below:

Total Suspended Particulate	8.3 lbs/hr
PM-10	3.4 lbs/hr
Sulfur Dioxide	44.1 lbs/hr
Nitrogen Oxides (as NO_2)	7.5 lbs/hr
Carbon Monoxide	8.7 lbs/hr
Volatile Organic Compounds	1.0 lbs/hr

(9 VAC 5-80-850)

20. **Emission Limits** - Emissions from the operation of the #2 boiler shall not exceed the limits specified below:

Total Suspended Particulate	8.3 lbs/hr
PM-10	3.4 lbs/hr
Sulfur Dioxide	44.1 lbs/hr
Nitrogen Oxides (as NO_2)	7.5 lbs/hr
Carbon Monoxide	8.7 lbs/hr
Volatile Organic Compounds	1.0 lbs/hr

(9 VAC 5-80-850)

21. **Emission Limits** - Emissions from the operation of the #3 boiler shall not exceed the limits specified below:

Total Suspended Particulate	0.4 lbs/mmbtu	10.4 lbs/hr
PM-10		4.3 lbs/hr

Sulfur Dioxide	24.5 lbs/hr
Nitrogen Oxides (as NO_2)	9.4 lbs/hr
Carbon Monoxide	10.9 lbs/hr
Volatile Organic Compounds	1.3 lbs/hr

(9 VAC 5-80-850)

22. **Emission Limits** - Emissions from the operation of the #4 boiler shall not exceed the limits specified below:

Total Suspended Particulate	0.4 lbs/mmbtu	13.0 lbs/hr
PM-10		5.4 lbs/hr
Sulfur Dioxide		30.6 lbs/hr
Nitrogen Oxides (as NO_2)		11.7 lbs/hr
Carbon Monoxide		13.6 lbs/hr
Volatile Organic Compounds		1.6 lbs/hr

(9 VAC 5-80-850)

23. **Emission Limits** - Combined emissions from the operation of the #1, #2, #3, and #4 boilers shall not exceed the limits specified below:

Total Suspended Particulate	40.5 tons/year
PM-10	17.4 tons/year
Sulfur Dioxide	96.9 tons/year

Nitrogen Oxides (as NO_2)	46.4 tons/year
Carbon Monoxide	44.0 tons/year
Volatile Organic Compounds	5.1 tons/year

(9 VAC 5-80-850)

24. **Emission Limits** - Emissions from the operation of the #5 boiler shall not exceed the limits specified below:

Sulfur Dioxide	1.9 lbs/hr	0.1 tons/year
Nitrogen Oxides (as NO_2)	0.9 lbs/hr	0.1 tons/year

(9 VAC 5-80-850)

25. **Emission Limits** - Emissions from the operation of the #6 boiler shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	0.2 lbs/hr	0.9 tons/year

(9 VAC 5-80-850)

26. **Emission Limits** - Emissions from the operation of the #7 generator shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	38.6 lbs/hr	19.3 tons/year
Carbon Monoxide	60.1 lbs/hr	30.0 tons/year
Volatile Organic Compounds	2.1 lbs/hr	1.1 tons/year

(9 VAC 5-80-850)

27. **Emission Limits** - Emissions from the operation of the #8, #9, #10, #11, #12, #13, #14, #15, #16, #17, #18, and #19 generators combined shall not exceed the limits specified below:

Total Suspended Particulate	2.8 lbs/hour	0.7 tons/year
PM-10	2.8 lbs/hour	0.7 tons/year
Carbon Monoxide	9.1 lbs/hr	2.3 tons/year
Sulfur Dioxide	3.8 lbs/hour	1.0 tons/year
Nitrogen Oxides (as NO_2)	49.7 lbs/hr	12.4 tons/year
Volatile Organic Compounds	3.3 lbs/hr	0.8 tons/year

(9 VAC 5-80-850)

28. **Plantwide Emission Limits -** Total emissions from the educational facility shall not exceed the limits specified below:

Total Suspended Particulate	42.8 lbs/hour	41.2 tons/year
PM-10	19.3 lbs/hour	18.1 tons/year
Sulfur Dioxide	152.5 lbs/hour	98.0 tons/year
Nitrogen Oxides (as NO_2)	125.5 lbs/hour	79.1 tons/year
Carbon Monoxide	111.1 lbs/hour	76.3 tons/year
Volatile Organic Compounds	10.3 lbs/hour	7.0 tons/year

These emission are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 4-16.
(9 VAC 5-80-850)

29. **Visible Emission Limit** - Visible emissions from the #1, #2, #3, #4, and #5 boilers shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by the EPA Method 9

(reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.
(9 VAC 5-80-850)

RECORDS

30. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Regional Office. These records shall include, but are not limited to:

    a. The combined yearly throughput of natural gas, the combined yearly throughput of residual oil, and the combined yearly throughput of coal, to boilers #1, #2, #3, and #4, calculated as the sum of each consecutive 12 month period.

    b. The yearly throughput of distillate oil to boiler #5, calculated as the sum of each consecutive 12 month period.

    c. The yearly hours of operation of generator #7, calculated as the sum of each consecutive 12 month period.

    d. The yearly hours of operation of each generator #8-#19, calculated as the sum of each consecutive 12 month period.

    e. All fuel supplier certifications, as described in Condition 17.

    These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
    (9 VAC 5-80-900)

GENERAL CONDITIONS

31. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

    a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

    b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;

    c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.
(9 VAC 5-170-130)

32. **Notification for Control Equipment Maintenance** - The permittee shall furnish notification to the Piedmont Regional Office of the intention to shut down or bypass, or both, air pollution control equipment for necessary scheduled maintenance, which results in excess emissions for more than one hour, at least 24 hours prior to the shutdown. The notification shall include, but is not limited to, the following information:

    a. Identification of the air pollution control equipment to be taken out of service, as well as its location, and registration number;

    b. The expected length of time that the air pollution control equipment will be out of service;

    c. The nature and quantity of emissions of air pollutants likely to occur during the shutdown period;

    d. Measures that will be taken to minimize the length of the shutdown or to negate the effect of the outage.

    (9 VAC 5-20-180 B)

33. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Piedmont Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but not later than four daytime business hours of the malfunction. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of the occurrence. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Piedmont Regional Office in writing.
(9 VAC 5-20-180 C)

34. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I)

35. **Maintenance/Operating Procedures** - The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

    a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.

    b. Maintain an inventory of spare parts.

    c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

    d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

    Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
    (9 VAC 5-50-20 E)

36. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

    a. Knowingly makes material misstatements in the application for this permit or any amendments to it;

    b. Fails to comply with the terms or conditions of this permit;

    c. Fails to comply with any emission standards applicable to the equipment listed in Condition 2;

    d. Causes emissions from this facility which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard;

    e. Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect on the date that the application for this permit is submitted;

    f. Fails to comply with the applicable provisions of 9 VAC 5-80-10, and Article 8 and Article 9 of 9 VAC 5 Chapter 80.

    (9 VAC 5-80-1010)

37. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Piedmont Regional Office of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-940)

38. **Registration/Update** - Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.
(9 VAC 5-80-900)

39. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-860 D)